Sensor Module
U9
MQ-4M

5v — 3 VCC   A_0 1 — ADC_Vin
GND — 4 GND   D_0 2 ✕

LDO 5v -> 3v3
U1
AMS1117-3.3

5v — 3 VI   VO 2 — 3v3
GND

Analog to Digital Converter
U8
CI121S021 [adc]

5v
C3 1uF   C2 10nF
GND
1 VA   C̅S̅ 6 — CS_5
2 GND   SDATA 5 — SDATA_5
A_0 — 3 VIN   SCLK 4 — CLK_5

ESP Program Pins

1 — ESP_3v3
2 — ESP_EN
3 — ESP_IO0
4 — ESP_TXD0
5 — ESP_RDD0
6 — ESP_GND

Conn_01x06_Pin
J1

Logic Shifting Circuits

5v
R1 10k
CS_5
Q1 NMOS
R2 10k
3v3
CS_3

5v
R7 10k
SDATA_5
Q3
R8 10k
3v3
SDATA_3

5v
R17 10k
CLK_5
Q4 NMOS
R16 10k
3v3
CLK_3

Power Transformer

F1 0.5A
L
RV1 10D561
C4 0.1uF
L1 10mH
PS1 HLK-5M05
1 AC/L   +Vout 4 — 5v
2 AC/N   -Vout 3
C5 220uF
GND
N

Buzzer

5v
BZ2 Buzzer
NMOS Q2
G
R9 100 — BUZZ_OUT
R20 10k
GND

U11
ESP32-WROOM-32E

3v3
22uF C8   0.1uF C7
GND   GND
ESP_3v3

ESP_IO0 25 — IO0   VDD   EN 3 — ESP_EN
ESP_TXD0 35 — TXD0/IO1
                SENSOR_VP 4
ESP_RXD0 34 — IO2
               RXD0/IO3 SENSOR_VN 5
26 — IO4
29 — IO5
CS_3 14 — IO12
16 — IO13
13 — IO14
23 — IO15
27 — IO16
SDATA_3 28 — IO17
CLK_3 30 — IO18
31 — IO19
33 — IO21
36 — IO22
37 — IO23
BUZZ_OUT 10 — IO25
11 — IO26
12 — IO27
8 — IO32
9 — IO33
6 — IO34
7 — IO35
                GND

R10 10k   C6 0.1uF
GND
R18 330
D3_Green LED

D3_Red LED   330 R19
GND

ESP_GND
GND

R2
R

D2
LED   green_resistor1
R

DO

R1
R

D1
IRLB1A

VCC

R3
R_Variable

GND

LM393

VCC

5
+

6
−

7
DO

AO

GND

C2
C

VCC

U2
MQ-6

analog_output

R4

6 A1   VH+   B1 1

4 A2   VH−   B2 3

C1

GND

AO

5

R5
R

GND

GND